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day for the sixty years from 1814 to 1873. Over the greater part of the British Islands, this February was one of the coldest Februaries on record; the Greenwich mean being  $33^{\circ}.8$ , or  $6^{\circ}.8$  below the average, while through Great Britain generally, from the Grampians to the Channel, the mean temperatures were from  $5^{\circ}$  to  $7^{\circ}$  below the monthly averages. Severe snow-storms blocked the lines on the east coast in the first few days of March, and also in North Wales, as many as thirty trains being snowed up between Newcastle and Berwick alone.

It has long been observed, that, for every degree below the average temperature in any week, a definite increase takes place in the average number of deaths, chiefly among elderly people. Among recent victims, two may be mentioned, — the famous Scotch naturalist, Mr. C. W. Peach, who was a most remarkable example of the irrepressible instinct of a true lover of nature; and Dr. Storrar, for many years chairman of convocation of the University of London. To him the medical graduates of that university owe far more than most of them are aware of. In the early days of the university, nearly half a century ago, its degrees were, for various reasons, looked on with much suspicion, and the other medical bodies in authority were inclined to deny any status whatever to the new graduates; in fact, attempts were made to prevent them from engaging in ordinary medical practice. Dr. Storrar sacrificed his own professional prospects in order to fight this question, and at the present day the London university degrees in medicine rank as the highest which it is possible to obtain.

The engineering tripos at Cambridge, alluded to in a former letter, has now been fairly established, and the chief regulations in connection therewith appeared in the university intelligence of the *Times* a few days ago. Inquiries as to the desirability of establishing degrees in engineering have been issued on behalf of the University of London.

The annual report of the director of the French agricultural department on the proceedings of the Phylloxera commission has just been published. It has been decided that none of the processes made known during the year 1885 entitle the inventors to the prize offered by the government, and accordingly the old remedies continue to be recommended. These are,  $1^{\circ}$ , submersion, which was applied in 1885 to 24,329 hectares;  $2^{\circ}$ , carbon disulphide, to 40,585; and,  $3^{\circ}$ , potassium sulpho-carbonate, to 5,227. American vines which have been planted now replace those destroyed, over a surface of 72,362 hectares. The surface which has resisted the attacks of the insect is about

twenty-two per cent of the whole surface suffering from the disease.

The hydrophobia scare is still sufficient to keep the muzzles on the unfortunate dogs. Questioned last night in the house of commons by Sir Henry Roscoe on the subject of M. Pasteur's cure for this terrible disease, Mr. Chamberlain replied, on behalf of the government, that he hoped to be able to arrange for such an investigation as would enable a just estimate to be formed of M. Pasteur's method, and its applicability in this country. In a recent paper read before the French academy of medicine, M. Pasteur gave details of three hundred and fifty cases, all of which, with one exception, he had treated successfully; and he has, whenever possible, secured certificates from doctors and veterinary surgeons as to the existence of rabies in the animals concerned. M. Pasteur hopes soon to turn his attention to diphtheria.

W.

London, March 13.

#### VIENNA LETTER.

THE struggle between gas and electricity as means of lighting has reached a new stage in the invention of Dr. Auer of Welsbach, Austria, a young Vienna chemist who has been experimenting at Professor Lieben's laboratory. The principle of Dr. Auer's invention is no new one. Every one knows the Drummond light, in which a cylinder of lime is brought to incandescence by a burning mixture of hydrogen and oxygen. But, in all previous attempts of this kind, a temperature was required too high for ordinary use. Dr. Auer has found a substance — the composition of which he unfortunately keeps a secret — which becomes incandescent at the temperature of a Bunsen burner. His lamp consists of such a burner, surrounded by a common lamp-cylinder, in the flame of which is hung a hollow cylinder of thin 'organtine' impregnated with a metallic salt solution. By the action of the flame, the organic matter of the 'organtine' is destroyed; the salt is converted into an oxide; and a white, very elastic, porous cylinder remains, which becomes incandescent. Dr. Auer's lamp has given, according to recent measurements, a luminous power of twenty candles at a gas-supply of fifty-six litres per hour.

A very important discovery, both for practical and theoretical medicine, has been made here by Mr. Ernst Freund, a pupil of Prof. E. Ludwig, at Professor Stricker's laboratory. From earlier experiments, it is known that blood does not coagulate so long as it is contained within the living healthy vessels; though clotting occurs whenever the vessels are injured, or have lost their vitality,

according to experiments made by Durante and by Zahn. In a short time (in man in three minutes) after the blood is withdrawn from the veins, or after death, coagulation of the blood commences. Coagulation can be hindered or suspended in various ways, such as contact with living healthy vessels (Lister, Bruecke), exposure to low temperature (at  $0^{\circ}\text{C}.$ ), or by the addition of solutions of certain neutral salts (sodium chloride, sulphate, carbonate; magnesium sulphate, etc.). If peptone is mixed with the blood, its clotting is suspended; and Dr. Haycraft of Edinburgh has kept it fluid for a longer time by adding an aqueous extract prepared from the intestines of leeches. It may be also noted that a German physiologist, Professor Gruenhagen, some time ago observed that blood, if collected in glycerine, remained fluid so long as a mixture did not take place.

Now, Mr. Freund has found a very simple method to prevent the coagulation. He collected the blood, drawn from the vein of an animal, under oil, and it remained fluid for many days. In further experiments it was found, that, in arterial blood collected in a glass vessel whose walls were continuously coated with a film of vaseline, the fibrine did not separate, even when stirred or agitated with a vaseline-coated glass rod; but, as soon as the blood was poured into an ordinary receptacle, the fibrine was immediately coagulated. It was further observed by Freund that the presence of minute foreign bodies, such as particles of dust, was sufficient to produce clotting. These experiments were made, both at ordinary temperatures and at that of the body, with equal success. In one of the experiments which I had the opportunity of seeing, a glass tube coated with oil was inserted into the carotid artery of a dog, while a dry tube was connected with the crural artery of the same animal. The blood in the latter was clotted in fifteen minutes; but the pulsations of the blood column in the oiled tube were perceptible for more than two hours and a half. Fresh blood contained in fish-bladders, or parchment tubes, which had been previously soaked in a 0.6 per cent solution of chloride of sodium, and afterwards covered with a like solution, remained fluid for many days.

Mr. Freund has made a preliminary communication on his researches, which will be continued in an early number of the *Wiener medicinische jahrbücher*.

V. C.

Vienna, Feb. 16.

#### NOTES AND NEWS.

THE teachers' course in chemistry at Harvard during the summer of 1886 will be under the di-

rection of Dr. Comey, and will open July 5, and close Aug. 14. Instruction will be given in general chemistry, qualitative analysis, quantitative analysis, and organic chemistry. A course in mineralogy will also be given. The fee for the course is twenty-five dollars. An additional charge, which has averaged from five to six dollars, is made for the material and apparatus consumed by each student. The summer classes are offered the same facilities for laboratory work as are open to students during the academic year. The college library is open for the use of students in these courses. For further information address Arthur M. Comey, Harvard chemical laboratory, Cambridge, Mass.

— On the 23d of September, 1882, Friedrich Wöhler died, in his eighty-third year, one of the last and one of the most eminent of the chemists whose lives and labors connected the early formative age of the science with that of its recent wide expansion. As investigator and teacher, as author and scientific correspondent, he deserved, as few have done of those who have passed away in our time, that his memory be held in honor by those who care for the science of chemistry. Soon after his death a movement was begun in Germany, originating with the German chemical society, for the collection of an adequate sum of money with which to erect in Göttingen a statue to Wöhler, as a permanent monument, on the spot where most of his life's work was done. The subscription has reached the sum of about four thousand dollars, but this is not yet sufficient for the purpose in view. The co-operation of American chemists has recently been asked by a member of the local committee in Göttingen, in a letter addressed to one of the undersigned, who have formed a committee for the United States in order to give practical shape to action in this country. Contributions may be sent to any one of the following: James C. Booth, U. S. mint, Philadelphia; J. W. Mallet (chairman), University of Virginia; C. F. Chandler, Columbia college, New York; H. B. Nason, Rensselaer polytechnic institute, Troy; F. Frerichs, Mallinckrodt chemical works, St. Louis; Ira Remsen (secretary and treasurer), Johns Hopkins university; Wolcott Gibbs, Cambridge; W. B. Rising, University of California, Berkeley; E. P. Harris, Amherst, Mass.; S. P. Sadtler, University of Pennsylvania, Philadelphia; J. W. Langley, Ann Arbor; C. U. Shepard, jun., Charleston, S. C.; F. Mahla, corner 21st Street and Stewart Avenue, Chicago; Eugene A. Smith, University of Alabama, Tuscaloosa.

— Four additional sheets of the New Jersey topographical map are lately issued, making ten